REMARKS

Applicant appreciates the Examiner's thorough consideration provided the present application. Claims 1-28 are now present in the application. Claims 1 and 16 are independent. Reconsideration of this application is respectfully requested.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nohno, U.S. Patent No. 6,239,788, in view of Ikeda, U.S. Patent No. 5,642,134. This rejection is respectfully traversed.

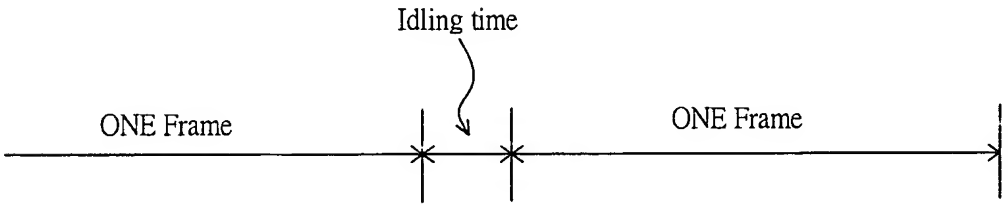
Independent claim 1 recites a combination of steps including "a first touch-position sensing step, which detects values of liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode, respectively, and detects a scan-line-direction touch position according to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods, each of the scan lines turning on sequentially to write image data into the LCD screen in the writing periods", "a charging step, which charges a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected", "a second touch-position sensing step, which detects values of liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode, respectively, and detects a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode after the voltage signal is

charged" and "the scan-line-direction touch position and the data-line-direction touch position indicate a position of the touch point."

Independent claim 16 recites a combination of elements including "a first sensing circuit, which respectively electrically connects to the scan lines needed to be detected, detects values of liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode, and detects a scan-line-direction touch position according to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode", "a timing control circuit, which electrically connects to the first sensing circuit and controls the first sensing circuit to detect the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods, each of the scan lines turning on sequentially to write image data into the LCD screen in the writing periods", "a voltage-signal generating circuit, which electrically connects to the timing control circuit and each of the data lines, wherein the timing control circuit controls the voltage-signal generating circuit to charge a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected" and "a second sensing circuit, which respectively electrically connects to each of the data lines needed to be detected, detects values of liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode, and detects a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode after the voltage signal is charged".

Applicant respectfully submits that the above combination of steps and elements as set forth in independent claims 1 and 16 are not disclosed nor suggested by the references relied on by the Examiner.

In the present invention, the values of liquid crystal capacitances formed between the counter electrode panel and the scan lines are detected, respectively, during the idling time in-between writing periods. As defined in the specification, the writing period is the period in which each of the scan lines turns on sequentially to write image data into the LCD screen. In other words, the idling time is the time interval between the writing periods (*i.e.*, in-between two frames; see also below.)



Unlike the present invention, Nohno in FIG. 6 discloses that one frame is time-sharingly divided into a coordinate detection period and a display period. In other words, the coordinate detection period (an X-coordinate Detection Period (by driving data lines) and a Y-coordinate Detection Period (by driving scan lines)) is within one frame, not in-between two frames. Therefore, Nohno fails to teach "detects a scan-line-direction touch position according to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods" as recited in claim 1 and

"detect the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods" as recited in claim 16.

Nohno in FIG. 6 also discloses that the coordinate detection operation is performed in an X-coordinate Detection Period (by driving data lines) **first**, and **then** a Y-coordinate Detection Period (by driving scan lines). Accordingly, the X-coordinate Detection Period (by driving data lines) occurs before the Y-coordinate Detection Period (by driving scan lines). Therefore, Nohno also fails to teach "charges a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected" and "a second touch-position sensing step ... detects a data-line-direction touch position ... after the voltage signal is charged" as recited in claim 1 and "charge a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected" and "a second sensing circuit ... detects a data-line-direction touch position... after the voltage signal is charged" as recited in claim 16.

The Examiner seemed to construe that since in one frame the display period is after the coordinate detection period, the voltage signal (for display) is charged into the data lines after the scan line detection take places, and that since in the next frame the coordinate detection period would take place again, the data lines would be detected after the voltage signal (for display) is charged in the previous frame. Applicant respectfully disagrees. In particular, claim 1 recites "the scan-line-direction touch position and the data-line-direction touch position indicate a position of the touch point." In other words, it is clear that the second touch-position sensing step (for data lines) occurs after the first touch-position sensing step (for scan lines) because the second touch-position sensing step is performed after the voltage signal is charged and the first

touch-position sensing step is performed before the voltage signal is charged. Unlike the present invention, Nohno in FIG. 6 discloses that the X-coordinate Detection step (for data lines) is performed before Y-coordinate Detection Period (for scan lines) in the same frame, which is in an opposite order to the claimed invention.

Applicant respectfully submits that the fist touch-position sensing step occurs before the second touch-position sensing step in the present invention. Because the off time of the scan lines is more than that of the data lines, the scan-line-direction touch position has more times to be detected to lessen the detecting area of the second touch-position sensing step. Additionally, after the scan-line-direction touch position is detected, the voltage is charged into each of the data lines needed to be detected so as to subsequently detect values of liquid crystal capacitances formed between the data lines and the counter electrode, and to detect a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines and the counter electrode to obtain the correct touch position.

With regard to the Examiner's reliance on Ikeda, this reference has only been relied on for its teachings of the counter electrode panel. This reference also fails to disclose the above combinations of steps and elements as set forth in independent claims 1 and 16. Accordingly, Ikeda fails to cure the deficiencies of Nohno.

Accordingly, neither of the references utilized by the Examiner individually or in combination teaches or suggests the limitations of independent claims 1 and 16 or their dependent claims. Therefore, Applicant respectfully submits that independent claims 1 and 16 and their dependent claims clearly define over the teachings of the references relied on by the Examiner.

Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103 are respectfully requested.

CONCLUSION

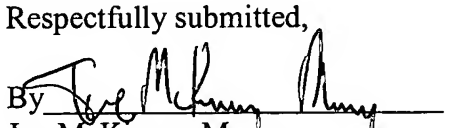
It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact Joe McKinney Muncy, Registration No. 32,334 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: September 20, 2006

Respectfully submitted,

By 

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